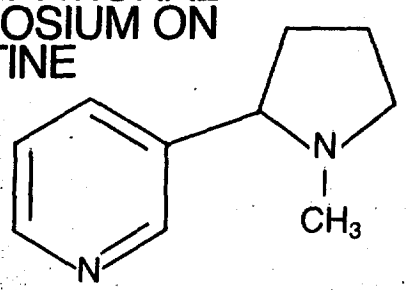
Final Programme

Effects of Nicotine on Biological Systems

INTERNATIONAL SYMPOSIUM ON NICOTINE



Satellite Symposium
of the
XIth International Congress
of Pharmacology

Hamburg
Hotel Inter-Continental
June 28–30, 1990

Sponsored by the
German Research Council on Smoking and Health

2028901717

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Thursday, June 28

14.00–18.00 **Registration**

18.00 **Opening Addresses**

F. X. Adlkofer, Bonn
Sir Peter Froggatt, London
K. Thurau, München

Session I — Ethnopharmacology of Nicotine

18.30 The ethnopharmacology of tobacco in native South America
J. Wilbert, Los Angeles

20.00 Reception

Friday, June 29

Session II — Metabolism of Nicotine

Chairmen *N. L. Benowitz, San Francisco*
D. Seidel, München

8.30 Introduction

8.45 Studies on the metabolic fate of the tobacco alkaloids (S)-nicotine, (S)-cotinine and ß-nicotyrine
N. Castagnoli, Jr., M. Shigenaga, A. Trevor, Blacksburg, and San Francisco

9.05 Oxidative metabolism of nicotine *in vivo*
P. Jacob, III, San Francisco

9.25 Conjugation pathways in nicotine metabolism
M. Curvall, E. Kazemi Vala, G. Englund, Stockholm

9.45 Relevance of nicotine-derived N-nitrosamines in tobacco carcinogenesis
D. Hoffmann, A. Rivenson, S. S. Hecht, Valhalla

10.05 Discussion

10.25–10.55 Coffee break

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Posters

1 Extrahepatic compared with hepatic metabolism of nicotine in the rat
H. Foth, U. Walther, H. Looschen, H. Neurath, G. F. Kahl, Göttingen

2 Contribution of trans 3'-hydroxycotinine and glucuronide conjugates of nicotine metabolites to the measurement of cotinine by RIA
N. J. Haley, Y. Leutzinger, C. M. Axelrad, J. P. Richie, Jr., Valhalla

3 Detection of nornicotine in human urine after the infusion of nicotine
G. B. Neurath, D. Orth, F. G. Pein, Hamburg

4 Estimation of nicotine and tobacco specific nitrosamines (TSNA) in saliva after nicotine infusion and after smoking
L. Jarczyk, H. Maier, I. A. Born, G. Scherer, F. Adlkofer, Bonn, Heidelberg, and München

5 Pharmacokinetics of nicotine after intranasal administration
C.-J. Johansson, P. Olsson, F. Kuylenstierna, P. O. Gunnarsson, Helsingborg

6 Nicotine application with an oral capsule
C. Conze, G. Scherer, F. Adlkofer, München, and Bonn

7 Toxicokinetics of nicotine-derived nitrosamines in the rat
B. L. Pool-Zobel, U. Liegibel, P. Schmezer, R. G. Klein, Heidelberg

8 No pyrosynthesis of NNN and NNK from nicotine
S. Fischer, B. Spiegelhalder, R. Preussmann, Heidelberg

9 Exposure to nicotine-derived N-nitroso compounds and evidence against endogenous formation
A. R. Tricker, R. Preussmann, Heidelberg

10 Intestinal first pass metabolism of NNK in the mouse
E. Richter, G. Hunder, München

Session III

General Pharmacology of Nicotine

Chairmen *M. J. Rand, Melbourne*
W. T. Ulmer, Bochum

10.55 Introduction

11.10 Effects of nicotine on insulin: Actions and implications
N. E. Grunberg, M. Raygada, Bethesda

11.30 Effect of nicotine on pulmonary defense systems
H.-L. Hahn, Würzburg

11.50 A new role for nicotine: Selective inhibition of thromboxane formation by direct interaction with thromboxane synthase
M. Goerig, V. Ullrich, G. Schettler, A. J. R. Habenicht, Nürnberg, Konstanz, and Heidelberg

12.10 New nicotinic agonists, antagonists, and ion channel blockers to probe multiple sites of nicotine's action in brain
L. G. Abood, S. Banerjee, J. Punzi, Rochester

12.30–14.00 Lunch

14.00 Mechanisms underlying the protective effects of chronic nicotine treatment against degeneration of central dopamine neurons by mechanical lesions
K. Fuxe, A. M. Janson, K. Andersson, J. Kåhrström, L. F. Agnati, C. Owman, Stockholm, Lund, and Modena

14.20 Nicotine: A unique psychoactive drug
E. F. Domino, Ann Arbor

14.40 Discussion

Posters

11 Effects of nicotine on inflammatory mediator release and signal-transduction
M. Raulf, W. König, Bochum

12 Nicotine induced alteration in phosphatase activity in plasma, liver and kidney of rats
S. Dasgupta, C. Mukherjee, S. Ghosh, Calcutta

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13 Effects of smoking on elastolytic activity, elastin-derived peptides and anti-elastin-antibodies in human serum
U. Müller-Bühl, U. Werner, C. Diehm, E. Wehrle, W. D. Heller, Heidelberg, and Karlsruhe

14 Oxidatively modified low density lipoproteins induce vascular hyper-responsiveness in hypercholesterolemia – Modification by chronic nicotine application?
E. Bassenge, J. Galle, Freiburg

15 Smoking depresses adipose lipoprotein lipase response to oral glucose
T. Chajek-Shaul, E. M. Berry, E. Ziv, G. Friedman, O. Stein, G. Scherer, Y. Stein, Jerusalem, and München

16 Comparative effects of nicotine and cotinine on prostacyclin and thromboxane synthetase
N. Chahine, B. Lasserre, A. Pham Huu Chanh, Montréal, and Toulouse

17 Cardiovascular effects of repeated nicotine administrations: Identification of pharmacologic conditions where self-sensitization or self-blockade takes place
S. L. Cruz, L. A. Salazar, J. E. Villarreal, Mexiko

18 Effect of nicotine and cotinine on arterial blood pressure of spontaneously hypertensive rats
M. Marin-Grez, U. Schmausser, H. Dietl, G. Scherer, München and Bonn

19 Differential effects of nicotine on cardiac noradrenaline and neuropeptide Y release in normoxia and anoxia
G. Richardt, T. Brenn, M. Haass, E. Schömig, A. Schömig, Heidelberg, and Würzburg

20 Evidence for noradrenaline-mediated changes in platelet and heart function following chronic treatment of rats and Guinea pigs with nicotine
B. F. Becker, P. Dominiak, E. Gerlach, München

21 Effect of nicotine on red cell deformibility in diabetes mellitus
K. Salbas, V. Ulusoy, T. Akyol, Ankara

22 Comparison of methods for removal of epithelium in airways from a small animal. Need for histologic verification
S. Bleicher, U. Zink, M. Lang, H.-L. Hahn, Würzburg

23 Nicotine-induced submucosal gland secretion and airway smooth muscle contraction have different mechanisms
H.-L. Hahn, B. Hümmer, M. Lang, Würzburg

24 Nicotine-induced contraction of tracheal smooth muscle *in vitro* requires presence of tracheal epithelium
M. Lang, H.-L. Hahn, Würzburg

25 Effect of chronic nicotine consumption on the morphology of the rat parotid gland
I. A. Born, G. Mall, G. Sidaras, H. Maier, Heidelberg

26 Effects of nicotine on ureteric motility
M. I. Cingi, K. Erol, S. Alpan, M. Ozdemir, Eskisehir

27 Craniofacial and cardioteratogenic effects of nicotine in mouse embryos
A. R. Fazel, Mashhad

28 Prenatal interaction of nicotine with developing nervous and endocrine systems
W. Lichtensteiger, B. Naeff-Odermatt, M. Schlumpf, N. von Ziegler, Zürich

29 Desipramine inhibits the nicotine-induced exocytosis in rat phaeochromocytoma cells (PC12)
S. Baunach, H. Russ, M. Haass, G. Richardt, H. G. Kress, A. Schömig, E. Schömig, Würzburg, and Heidelberg

Session IV — Mechanisms of Nicotine Actions in the CNS

Chairmen *J. A. Rosecrans, Richmond*
H. Kewitz, Berlin

15.00 Introduction

15.15 Effects of nicotine on brain metabolism
E. D. London, Baltimore

15.35 Increased sensitivity of brain muscarinic receptor to its agonists as a result of repeated nicotine pretreatment in rats, mice and rabbits
C. Liu, H. Wang, Beijing

15.55 Regulation of opioid peptide gene expression by nicotine
V. Höllt, C.-J. Farin, G. Horn, München

16.15–16.45 Coffee break

16.45 The mesolimbic dopaminergic system as a target for nicotine
P. B. S. Clarke, Montréal

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